

Europäisches Patentamt
European Patent Office
Office européen des brevets



1) EP 1 457 234 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3: 01.12.2004 Bulletin 2004/49

(51) Int Cl.7: A61N 5/06

(43) Date of publication A2: 15.09.2004 Bulletin 2004/38

(21) Application number: 04011578.4

(22) Date of filing: 20.03.2001

(84) Designated Contracting States:

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU

MC NL PT SE TR

Designated Extension States:

Designated Extension States

AL LT LV MK RO SI

(30) Priority: 23.03.2000 GB 0007085 17.04.2000 GB 0009491 19.12.2000 GB 0030974

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC: 01302586.1 / 1 138 349 (71) Applicant: Photo Therapeutics Limited Altrincham Cheshire WA14 1EP (GB)

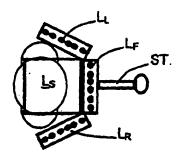
(72) Inventor: Whitehurst, Colin
New Road, Altrincham, Cheshire WA14 1EP (GB)

(74) Representative:
Cross, James Peter Archibald et al
R.G.C. Jenkins & Co.,
26 Caxton Street
London SW1H 0RJ (GB)

(54) Therapeutic light source and method

(57) A therapeutic light source comprises rigid arrays of LED's (L $_{\rm F}$, L $_{\rm L}$, L $_{\rm R}$) movably connected together, and cooled by forced air convection. The output intensity of the arrays is at least 10mW/cm² with a spatial intensity fluctuation of 10% or less in the treatment field. The emission spectra of the LED's may be substantially limited to the range 400 to 430 nm, or 590 to 640 nm. The light source may be used for cosmetic treatment, such as skin rejuvenation, wrinkle removal and/or biostimulation.

Fig. 20a





PARTIAL EUROPEAN SEARCH REPORT

Application Number

which under Rule 45 of the European Patent ConventionEP 04 01 1578 shall be considered, for the purposes of subsequent proceedings, as the European search report

		DERED TO BE RELEVANT		
Category	Citation of document with of relevant pas	Indication, where appropriate, sages	Relevant to daim	CLASSIFICATION OF THE APPLICATION (INLCI.7)
X	US 5 634 711 A (KA 3 June 1997 (1997- * column 2, line 1 * column 3, line 3 * column 9, line 2 1,6,7,14,15,18; fi	06-03) 0 - line 27 * 8 - column 4, line 49 * 5 - line 30; claims	5-7,9, 17-19	A61N5/06
X	WO 93/21842 A (QUA ;AMERICAN CYANAMID 11 November 1993 (CO (US)) 1993-11-11)	5-7	
Υ	* page 8, line 26	- page 9, Tine-7 *	1-4,8,9, 14-19	
	* page 10, line 8 - * page 11, line 12 * page 16, line 28 * page 18, line 4 - claims 1-3; figure:	- line 25 * - page 17, line 3 * - page 19, line 32;		
Y	WO 93/09847 A (LARS 27 May 1993 (1993-0)5-27)	1-4, 14-19	
	* page 4, line 16 - * page 6, line 27 - 1-5,8; figures 1,2	- page 7, line 7; claims		TECHNICAL FIELDS SEARCHED (Int.CL7)
		-/		
INCO	MPLETE SEARCH		.l , -, ,	
not compti be carried	y with the EPC to such an extent that out, or can only be carried out partia	application, or one or more of its claims, does a meaningful search into the state of the art dly, for these claims.		
Claims se	arched completely :			
Claims se	arched incomplately :			
Claims no	searched:			
Reason to	r the Britistion of the search:		1	
see	sheet C			
	••		į	
	Place of search	Date of completion of the search		Examiner
	Munich	30 September 2004	4 Rici	
X : parti Y : parti	ATEGORY OF CITED DOCUMENTS cultarly relevant if taken alone cultarly relevant if combined with ano	E : earlier patent doc after the filling dat	cument, but publis la	ivention hed on, or
docu A ; techi	ment of the same category nological background -written disclosure	L : document cited for	or other reasons	
0.22				



INCOMPLETE SEARCH SHEET C

Application Number EP 04 01 1578

Claim(s) searched completely:	
Claim(s) not searched: 20-23	
Reason for the limitation of the search (non-pa	tentable invention(s)):
Article 52 (4) EPC - Method for treatment of the therapy	e human or animal body by
	•



PARTIAL EUROPEAN SEARCH REPORT

Application Number

EP 04 01 1578

	DOCUMENTS CONSIDERED TO BE RELEVANT		CLASSIFICATION OF THE APPLICATION (InLCL7)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
Y	DE 88 13 852 U (NORMEDICA AG) 29 December 1988 (1988-12-29) * page 5, line 11 - line 25 * * page 6, line 18 - line 23 * * page 7, line 21 - line 33 *	1-4	
Y	US 5 278 432 A (IGNATIUS RONALD W ET AL) 11 January 1994 (1994-01-11) * column 2, line 3 - line 12 * * column 3, line 38 - column 4, line 20 * * column 5, line 4 - line 12 *	8,9	····.
Y	WO 00/02491 A (HARTH YORAM; KORMAN AVNER (IL)) 20 January 2000 (2000-01-20) * page 4, line 8 - line 11 * * page 4, line 29 - line 32 * * page 6, line 3 - line 6 * * page 12, line 17 - line 23; claim 12 *	15-19	TECHNICAL FIELDS SEARCHED (Int.CI.7)
Y	WO 95/26217 A (MAEF SRL; MANUNTA ANTONIO (IT); SELLA GIANNI (IT); E D M DI GIUSEPPIN) 5 October 1995 (1995-10-05) * page 3, line 1 - line 19 * * page 4, line 14 - page 5, line 26; claims 12-16 *	15-19	
A	US 5 913 883 A (BRIGHTON ARRIANNA ET AL) 22 June 1999 (1999-06-22) * column 2, line 3 - line 60 * * column 3, line 8 - line 18 * * column 3, line 44 - line 52 *	1-4,7-19	
A -	DE 41 13 803 A (IWG EASTMED MEDIZINTECHNIK GMB) 29 October 1992 (1992-10-29) * column 1, line 64 - column 2, line 7 * * column 2, line 57 - line 64; claim 3; figure 2 *	13	



Application Number

EP 04 01 1578

CLAIMS INCURRING FEES
The present European patent application comprised at the time of filing more than ten claims.
Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.
LACK OF UNITY OF INVENTION
The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:
see sheet B
All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:
·



LACK OF UNITY OF INVENTION SHEET B

Application Number

EP 04 01 1578

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-4 and 7-19 (if dependent on claim 1)

A light source for therapy comprising a first, second and third rigid array of light emitting diodes movably connected to the first array.

2. claims: 5,6 and 7-19 (if dependent on claim 5)

A therapeutic light source comprising an array of light emitting diodes with an output intensity of at least 10 mW/cm2 and a spatial intensity fluctuation of 10% or less.

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 04 01 1578

This annax lists the patent tamity members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of Information.

30-09-2004

C-11	Patent document ed in search report		Publication date		Patent family member(s)		Publication date
US	5634711	Α.	03-06-1997	US	5420768	A	30-05-199
-				AU	7737894	Α	03-04-199
				CA	2149339	A1	23-03-199
				WO	9507731	A1	23-03-199
WO	9321842	Α	11-11-1993	AU	3786093	A	29-11-199
				CN	1079673		22-12-199
	•			MX	9302240		01-10-199
				WO	9321842	A1	11-11-199
WO	9309847	A	27-05-1993	СН	685148		13-04-199
				AT	176874		15-03-199
				ΑU	2929492		15-06-199
				CA	2112132	-	27-05-199
				WO	9309847		27-05-199
				DE	59209638		01-04-199
				DK	568666		24-09-200
				EP	0568666		10-11-199
				GR	3030199	T3	31-08-199
DE	8813852	U	29-12-1988	DE	8813852	U1	29-12-198
US	5278432	A	11-01-1994	NONE			
WO	0002491	A	20-01-2000	AU	4645099	A	01-02-200
				EP	1100366	-	23-05-200
				WO	0002491		20-01-200
				JP	2002526128		20-08-20
				US	2001023363	A1	20-09-20
WO	9526217	Α	05-10-1995	IT	T0940231		29-09-199
				AU	2255795		17-10-19
				WO	9526217	A1	05-10-199
115	5913883	A	22-06-1999	NONE			
03	4113803	A	29-10-1992	DE	4113803	A1	29-10-19

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82